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What is claimed is:

1. An apparatus for performing a tertiary treatment of sewage using porous filtering media, comprising:

a reaction tank into which effluent wastewater of a settling basin flows;

porous filtering media in the shape of a ring with both ends going amiss having predetermined sizes of surface areas and openings and filled in the reaction tank, for removing suspended solids by precipitating suspended solid particles included in the effluent wastewater and removing organic matters and nutritive salts included in the suspended solid particles along with the precipitation removal of the suspended solid particles; and

a two-step overflow weir installed in the upper surface of the efflux portion of the reaction tank, for discharging the water uniformly cleaned in the reaction tank, wherein the two-step overflow weir receives an upper flow of the effluent wastewater flowing in through one side of the two-step overflow weir and receiving a lower flow of the effluent wastewater flowing in through the bottom and the other side.

2. The apparatus as recited in claim 1, wherein the porous filtering media are formed of waste plastics or plastics having a size of 10 ~ 300mm.

3. The apparatus as recited in claim 1, wherein the small size of the porous filtering media are filled in the upper part of the reaction tank, and the size of the porous filtering media becomes larger as it goes to the lower part of the reaction tank.

4. The apparatus as recited in claim 1, wherein the opening rate of the porous filtering media filled in the reaction tank is 50 ~ 90%.

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5. The apparatus as recited in claim 1, wherein the reaction tank includes:

a fore reaction tank, which is filled with the porous filtering media, for collecting the effluent wastewater from the settling basin and performing precipitation based on biological, physical and chemical reactions;

a rear reaction tank filled with a predetermined size of porous filtering media, for re-treating the effluent water from the fore reaction tank;

a discharging tank provided with a two-step overflow weir on one side of the upper part of the efflux portion, for retaining and discharging the secondary effluent water from the rear reaction tank; and

rectifying walls having a plurality of efflux openings for partitioning the fore reaction tank, rear reaction tank and discharging tank.

6. The apparatus as recited in claim 5, wherein the filtering media filled in the fore reaction tank are formed of a predetermined size of porous filtering media.

7. The apparatus as recited in claim 5, wherein the filtering media filled in the fore reaction tank are formed of any one selected from a group consisting of aluminum sulfate, iron salt, lime and polymer coagulant.

8. The apparatus as recited in claim 5, further including:

a highly pure oxygen injection means, installed in the lower part of the fore reaction tank, for inducing phosphorous removal and denitrification.

9. The apparatus as recited in claim 5, further including:

an ozone injection means, installed in the lower part of the fore reaction tank, for inducing phosphorous

removal and denitrification.

10. The apparatus as recited in claim 5, wherein the diameter of the porous filtering media in the fore reaction tank is 50 ~ 300 mm.

11. The apparatus as recited in claim 5, wherein the diameter of the porous filtering media in the rear reaction tank is 10 ~ 200 mm.

12. The apparatus as recited in claim 5, wherein the opening rate of the porous filtering media filled in the fore and rear reaction tanks is 50 ~ 90%.

13. The apparatus as recited in claim 6, wherein the porous filtering media are formed of plastics including waste plastics.

14. The apparatus as recited in claim 5, wherein the size of the porous filtering media in the fore part of the rear reaction tank is large, and the size of the porous filtering media becomes smaller as the porous filtering media goes to the rear part.

15. The apparatus as recited in claim 5, further including:

sludge retention tanks installed in the lower parts of the fore and rear reaction tanks, respectively, for collecting and removing the sludge produced during the sewage treatment process.

16. The apparatus as recited in claim 5, further including:

an air supplier installed in the lower part of the rear reaction tank, for removing the sludge produced during the sewage treatment process.

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17. The apparatus as recited in claim 5, further including:

a supersonic generator installed in the lower part of the rear reaction tank, for removing the sludge produced during the sewage treatment process.

18. The apparatus as recited in claim 5, wherein the area of the influx portion of the fore reaction tank is formed larger than the area of the efflux portion of the rear reaction tank to make the speed of a current uniformly distributed in the fore and rear reaction tanks.

19. The apparatus as recited in claim 5, further including:

an upper rectifying wall, which has a plurality of efflux openings and is extended to the inner side of the rear reaction tank from a predetermined area of the rectifying wall that partitions the rear reaction tank and the discharging retention tank, for minimizing the dead space area of the rear reaction tank.

20. A method for performing a tertiary treatment of sewage using porous filtering media, comprising the steps of:

a) collecting the effluent wastewater from a settling basin, flowing the effluent wastewater through porous filtering media having predetermined sizes of surface areas and openings and filled in a fore reaction tank, and processing suspended solids and organic matters based on biological, physical and chemical reactions;

b) taking in the rear reaction tank the effluent water cleaned in the fore reaction tank, flowing the cleaned water through the porous filtering media having predetermined sizes of surface areas and openings and filled in the rear reaction tank, and removing suspended solids and organic matters based on biological, physical and chemical reactions; and

c) retaining the water discharged from the rear reaction tank in the discharging tank and discharging the water through a two-step overflow weir.

21. The method as recited in claim 20, further comprising a step of:

d) removing nitrogen and phosphorous included in the suspended solids by getting rid of the sludge precipitated in the fore and rear reaction tanks periodically.

22. The method as recited in claim 20, further comprising a step of:

e) inducing the oxidation and nitrification of the organic matters by supplying dissolved oxygen to the fore reaction tank, and then promoting denitrification reaction in the rear reaction tank.

23. The method as recited in claim 20, further comprising a step of:

f) removing the organic matters by supplying ozone (O_3) to the fore reaction tank to promote the biodegradation of the organic matters which are not decomposed easily, increasing the efficiency of removing coagulated particles and inducing nitrification, and promoting denitrification in the rear reaction tank.

24. The method as recited in claim 20, further comprising a step of:

g) coagulating and precipitating the dissolved phosphorous by adding a coagulant to the fore reaction tank to increase the effect of removing the suspended solids.

25. The method as recited in claim 20, further comprising a step of:

h) cleaning and removing the sludge attached on the porous filtering media periodically by providing air or supersonic from the lower part to the upper part of the

fore and rear reaction tanks.

26. The method as recited in claim 1, wherein the porous filtering media are in form of a coil spring shape including a ring with both ends going amiss consecutively.

27. The apparatus as recited in claim 1, wherein the porous filtering media are attached in the reaction tank.